## **SEQUENCE LISTING**

<110> Bodine, Peter PHARMACEUTICAL COMPOSITIONS AND METHODS USING SECRETED FRIZZLED RELATED <120> **PROTEIN** <130> 00630/100M091-US1 <150> us 10/169,545 <151> 2002-05-31 <150> us 60/412,379 2002-09-19 <151> <160> <170> PatentIn version 3.1 <210> 2602 <211> <212> DNA <213> Homo sapiens <400> gatctgctgg ggactgcgcc ttttgtcccc ggaggtccct ggaagtttgc ggcgggacgc 60 120 gcgcggggag gcggcggagg cagccccgac gtcgcggaga acagggcgca gagccggcat 180 gggcatcggg cgcagcgagg ggggccgccg cggggcagcc ctgggcgtgc tgctggcgct 240 gggcgcggcg cttctggccg tgggctcggc cagcgagtac gactacgtga gcttccagtc 300 ggacatcggc ccgtaccaga gcgggcgctt ctacaccaag ccacctcagt gcgtggacat 360 ccccgcggac ctgcggctgt gccacaacgt gggctacaag aagatggtgc tgcccaacct 420 gctggagcac gagaccatgg cggaggtgaa gcagcaggcc agcagctggg tgcccctgct 480 caacaagaac tgccacgccg gcacccaggt cttcctctgc tcgctcttcg cgcccgtctg 540 cctggaccgg cccatctacc cgtgtcgctg gctctgcgag gccgtgcgcg actcgtgcga 600 gccggtcatg cagttcttcg gcttctactg gcccgagatg cttaagtgtg acaagttccc 660 cgagggggac gtctgcatcg ccatgacgcc gcccaatgcc accgaagcct ccaagcccca 720 aggcacaacg gtgtgtcctc cctgtgacaa cgagttgaaa tctgaggcca tcattgaaca 780 tctctgtgcc agcgagtttg cactgaggat gaaaataaaa gaagtgaaaa aagaaaatgg 840 cgacaagaag attgtcccca agaagaagaa gcccctgaag ttggggccca tcaagaagaa 900 qqacctgaag aagcttgtgc tgtacctgaa gaatggggct gactgtccct gccaccagct ggacaacctc agccaccact tcctcatcat gggccgcaag gtgaagagcc agtacttgct 960 1020 gacggccatc cacaagtggg acaagaaaaa caaggagttc aaaaacttca tgaagaaaat 1080 gaaaaaccat gagtgcccca cctttcagtc cgtgtttaag tgattctccc gggggcaggg 1140 aattctgcag atatccagca tggggaggga gcctcgggtg gggtgggagc gggggggaca gtgccccggg aacccggtgg gtcacacaca cgcactgcgc ctgtcagtag tggacattgt 1200

1

aatccagtcg	gcttgttctt	gcagcattcc	cgctcccttc	cctccatagc	cacgctccaa	1260
accccagggt	agccgtggcc	gggtaaagca	agggccattt	agattaggaa	ggtttttaag	1320
atccgcaatg	tggagcagca	gccactgcac	aggaggaggt	gacaaaccat	ttccaacagc	1380
aacacagcca	ctaaaacaca	aaaaggggga	ttgggcggaa	agtgagagcc	agcagcaaaa	1440
actacatttt	gcaacttgtt	ggtgtggatc	tattggctga	tctatgcctt	tcaactagaa	1500
aattctaatg	attggcaagt	cacgttgttt	tcaggtccag	agtagtttct	ttctgtctgc	1560
tttaaatgga	aacagactca	taccacactt	acaattaagg	tcaagcccag	aaagtgataa	1620
gtgcagggag	gaaaagtgca	agtccattat	gtagtagtga	cagcaaaggg	accaggggag	1680
aggcattgcc	ttctctgccc	acagtctttc	cgtgtgattg	tctttgaatc	tgaatcagcc	1740
agtctcagat	gccccaaagt	ttcggttcct	atgagcccgg	ggcatgatct	gatccccaag	1800
acatgtggag	gggcagcctg	tgcctgcctt	tgtgtcagaa	aaaggaaacc	acagtgagcc	1860
tgagagagac	ggcgattttc	gggctgagaa	ggcggtagtt	ttcaaaacac	atagttaaaa	1920
aagaaacaaa	tgaaaaaaat	tttagaacag	tccagcaaat	tgctagtcag	ggtgaattgt	1980
gaaattgggt	gaagagctta	cgattctaat	ctcatgtttt	ttccttttca	catttttaaa	2040
agaacaatga	caaacaccca	cttatttttc	aaggttttaa	aacagtctac	attgagcatt	2100
tgaaaggtgt	gctagaacaa	ggtctcctga	tccgtccgag	gctgcttccc	agaggagcag	2160
ctctccccag	gcatttgcca	agggaggcgg	atttccctgg	tagtgtagct	gtgtggcttt	2220
ccttcctgaa	gagtccgtgg	ttgccctaaa	acctaacacc	ccctagcaaa	actcacagag	2280
ctttccgttt	ttttctttcc	tgtaaagaaa	catttccttt	gaacttgatt	gcctatggat	2340
caaagaaatt	cagaacagcc	tgcctgtccc	cccgcacttt	ttacatatat	ttgtttcatt	2400
tctgcagatg	gaaagttgac	atgggtgggg	tgtccccatc	cagcgagaga	gtttcaaaag	2460
caaaacatct	ctgcagtttt	tcccaagtgc	cctgagatac	ttcccaaagc	ccttatgttt	2520
aatcagcgat	gtatataagc	cagttcactt	agacaacttt	acccttcttg	tccaatgtac	2580
aggaagtagt	tctaaaaaaa	aa				2602

<sup>&</sup>lt;210> 2 <211> 314 <212> PRT <213> Homo sapiens

Val Leu Leu Ala Leu Gly Ala Ala Leu Leu Ala Val Gly Ser Ala Ser 20 25 30

<sup>&</sup>lt;400> 2

Glu Tyr Asp Tyr Val Ser Phe Gln Ser Asp Ile Gly Pro Tyr Gln Ser 35 40 45 Gly Arg Phe Tyr Thr Lys Pro Pro Gln Cys Val Asp Ile Pro Ala Asp 50 55 60 Leu Arg Leu Cys His Asn Val Gly Tyr Lys Lys Met Val Leu Pro Asn 65 70 75 80 Leu Leu Glu His Glu Thr Met Ala Glu Val Lys Gln Gln Ala Ser Ser 85 90 95 Trp Val Pro Leu Leu Asn Lys Asn Cys His Ala Gly Thr Gln Val Phe 100 105 110 Leu Cys Ser Leu Phe Ala Pro Val Cys Leu Asp Arg Pro Ile Tyr Pro 115 120 125 Cys Arg Trp Leu Cys Glu Ala Val Arg Asp Ser Cys Glu Pro Val Met 130 135 140 Gln Phe Phe Gly Phe Tyr Trp Pro Glu Met Leu Lys Cys Asp Lys Phe 145 150 155 160 Pro Glu Gly Asp Val Cys Ile Ala Met Thr Pro Pro Asn Ala Thr Glu 165 170 175 Ala Ser Lys Pro Gln Gly Thr Thr Val Cys Pro Pro Cys Asp Asn Glu 180 185 190 Leu Lys Ser Glu Ala Ile Ile Glu His Leu Cys Ala Ser Glu Phe Ala 195 200 205 Leu Arg Met Lys Ile Lys Glu Val Lys Lys Glu Asn Gly Asp Lys Lys 210 215 220 Ile Val Pro Lys Lys Lys Pro Leu Lys Leu Gly Pro Ile Lys Lys 225 230 235 240 Lys Asp Leu Lys Lys Leu Val Leu Tyr Leu Lys Asn Gly Ala Asp Cys 245 250 255 Pro Cys His Gln Leu Asp Asn Leu Ser His His Phe Leu Ile Met Gly 265 270 Arg Lys Val Lys Ser Gln Tyr Leu Leu Thr Ala Ile His Lys Trp Asp 275 280 285

Lys Ly 29	ys Ası 90	n Lys	Glu	Phe	Lys 295	Asn	Phe	Met	Lys	Lys 300	Met	Lys	Asn	His	
Glu Cy 305	ys Pro	o Thr	Phe	Gln 310	Ser	Val	Phe	Lys							
<210> <211> <212> <213>	16	ifici	al s	eque	nce										
<220> <223>	PCR	prim	ıer												
<400> aagct	3 ttttt	tttt	:ta												16
<210> <211> <212> <213>	13 DNA		al S	eque	nce										
<220> <223>	PCR	prim	ner												
<400> aagct		gcc													13
<210> <211> <212> <213>	21 DNA	ifici	ial S	eque	nce										
<220> <223>		prin	ner												
<400> gctgg		gcgo	cttt	tg t											21
<210><211><211><212><213>	23 DNA	ifici	ial s	eque	nce										
<220> <223>		prin	mer										•		
<400> cctgc		ggag	gaato	ac t	ta										23
<210><211><211><212><213>	313 PRT		oiens	;											
<300> <308>	Gen	Bank	/ NF	_003	003										

the second second

<309> 2003-09-06 <313> (1)..(313)

<400> 7

Met Gly Ile Gly Arg Ser Glu Gly Gly Arg Arg Gly Ala Leu Gly Val 1 5 10

Leu Leu Ala Leu Gly Ala Ala Leu Leu Ala Val Gly Ser Ala Ser Glu 20 25 30

Tyr Asp Tyr Val Ser Phe Gln Ser Asp Ile Gly Pro Tyr Gln Ser Gly 35 45

Arg Phe Tyr Thr Lys Pro Pro Gln Cys Val Asp Ile Pro Ala Asp Leu 50 55 60

Arg Leu Cys His Asn Val Gly Tyr Lys Lys Met Val Leu Pro Asn Leu 65 70 75 80

Leu Glu His Glu Thr Met Ala Glu Val Lys Gln Gln Ala Ser Ser Trp 85 90 95

Val Pro Leu Leu Asn Lys Asn Cys His Ala Gly Thr Gln Val Phe Leu 100 105 110

Cys Ser Leu Phe Ala Pro Val Cys Leu Asp Arg Pro Ile Tyr Pro Cys 115 120 125

Arg Trp Leu Cys Glu Ala Val Arg Asp Ser Cys Glu Pro Val Met Gln 130 135 140

Phe Phe Gly Phe Tyr Trp Pro Glu Met Leu Lys Cys Asp Lys Phe Pro 145 150 155 160

Glu Gly Asp Val Cys Ile Ala Met Thr Pro Pro Asn Ala Thr Glu Ala 165 170 175

Ser Lys Pro Gln Gly Thr Thr Val Cys Pro Pro Cys Asp Asn Glu Leu 180 185 190

Lys Ser Glu Ala Ile Ile Glu His Leu Cys Ala Ser Glu Phe Ala Leu 195 200 205

Arg Met Lys Ile Lys Glu Val Lys Lys Glu Asn Gly Asp Lys Lys Ile 210 215 220

Val Pro Lys Lys Lys Pro Leu Lys Leu Gly Pro Ile Lys Lys 225 230 235 240

Asp	Leu	Lys	Lys	Leu 245	val	Leu	Tyr	Leu	Lys 250	Asn	Gly	Ala	Asp	Cys 255	Pro	
Cys	His	Gln	Leu 260	Asp	Asn	Leu	Ser	ніs 265	нis	Phe	Leu	Ile	Met 270	Gly	Arg	
Lys	val	Lys 275	Ser	Gln	Tyr	Leu	Leu 280	Thr	Ala	Ile	His	Lys 285	Тгр	Asp	Lys	
Lys	Asn 290	Lys	Glu	Phe	Lys	Asn 295	Phe	Met	Lys	Lys	Met 300	Lys	Asn	His	Glu	
Cys 305	Pro	Thr	Phe	Gln	Ser 310	val	Phe	Lys								
<210 <211 <211 <211	1> 2>	18	fici	al S	eque	nce										
<220 <223		olig	onuc	leot	ide											
<400 ggc		8 gca	tcgg	gcgc												18
<210 <210 <210 <210	1> 2>	9 18 DNA Arti	fici	al s	eque	nce										
<22 <22		olig	onuc	leot	ide											
<40 gcg		9 Jatg	ccca	tgcc												18
<21 <21 <21 <21	1> 2>	10 19 DNA Arti	fici	al S	eque	nce										
<22 <22		PCR	prim	er												
<40 ctg	0> aggo	10 ctgt	gcca	caac	:g											19
<21 <21 <21 <21	1> 2>	11 19 DNA Arti	fici	al S	eque	nce										
<22 <22	0> 3>	PCR	prim	ıer						-						

<400> catgac	cggc tcgcacgag	19
<210> <211> <212> <213>	12 30 DNA Artificial Sequence	
<220> <223>	PCR primer	
<400> gcagcg	12 ggac gcgcgtga aggcagcgtg	30
	13 30 DNA Artificial Sequence	
<220> <223>	PCR primer	
	13 cgcg ggcgtgggaa ggcataccct	30
<210> <211> <212> <213>	14 22 DNA Artificial Sequence	
<220> <223>	PCR primer	
<400> atgtgt	14 catct tgagttggta tc	22
<210> <211> <212> <213>		
<220> <223>	PCR primer	
	15 cactt gcaaattgat gc	22
<210> <211> <212> <213>	21	
<220> <223>	PCR primer	
<400> caaca	16 tagca ctacatcttc g	21

<212>	17 18 DNA Artificial Sequence	
<220> <223>	PCR primer	
<400> ggccaa	17 cgct gaagccag	18
<211> <212>	18 25 DNA Artificial Sequence	
<220> <223>	PCR primer	
<400> ggcagc	18 cccg acgtcgccga gcaac	25
<210> <211> <212> <213>	19 24 DNA Artificial Sequence	
<220> <223>	PCR primer	
<400> ccttgg	19 ggtt agaggcttcc gtgg	24
<210> <211> <212> <213>	20 26 DNA Artificial Sequence	
<220> <223>	PCR primer	
<400> acggca	20 tggt gccaatgaat cgtctg	26
<210> <211> <212> <213>	21 26 DNA Artificial Sequence	
<220> <223>	PCR primer	
	21 atat cggtggccgt ggtgtc	26
<210> <211> <212>	22 19 DNA	

Section 1995

<213>	Artificial Sequence	
<220> <223>	PCR primer	
<400> gccaca	22 acgt gggctacaa	19
<210> <211> <212> <213>		
<220> <223>	PCR primer	
	23 gcca tggtctcgtg	20
<210> <211> <212> <213>	23	
<220> <223>	probe	
<400> agatgg	24 tgct gcccaacctg ctg	23
<210> <211> <212> <213>	24	
<220> <223>	PCR primer	
<400> ctgctg	25 atga agcagaacaa cttt	24
<210> <211> <212> <213>	19 DNA	
<220> <223>	PCR primer	
<400> gcgtgt	26 cacca cagcggatg	19
<210> <211> <212> <213>	21	
<220>	nrohe	

<400> cgccgt	gcgc tgttcgcatt a	21
<210> <211> <212> <213>	28 20 DNA Artificial Sequence	
<220> <223>	PCR primer	
<400> cgcttg	28 tgct gttcctgaag	20
<212>	29 20 DNA Artificial Sequence	
<220> <223>	PCR primer	
	29 atga tgagaaagtt	20
<212>	30 21 DNA Artificial Sequence	
<220> <223>	probe	
	30 ctgt ccctgccacc a	21